

Anish Agarwal

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EDUCATION

Texas A&M University, College Station, TX, USA

Aug 2022 - Dec 2024

Master of Science in Mechanical Engineering | **GPA-3.7/4**

MIT World Peace University, Pune, MH, India

Jul 2017- May 2021

Bachelor of Technology in Mechanical Engineering | **GPA-9.51/10**

SKILLS

Technical – CAD, FEM, CFD, Product Design, GD&T, DFMEA, Additive Manufacturing, Mechatronics, DAQ, Control System Design, QA. Software – SolidWorks, Catia, ANSYS, Creo, AutoCAD, Mastercam, MATLAB, Simulink, LabView, Python, C++, MS Office.

WORK EXPERIENCE

Student Technician | Vibration Controls and Electromechanical Lab, TAMU

Jan 2023 – Present

Interface Damping and Rotordynamic Analysis

- Spearheaded complex FEM modelling and analysis to calculate interface stiffness and damping coefficients with 99.8% accuracy.
- Led designing and conducted experimental validation of contact interface damping in rotordynamics and static stressed joints.
- Enhanced API 617 harmonic calculations by 10% through advanced modelling techniques and utilizing experimental results.

Radial Jetting for Horizontal Drilling | RADJET

- Developed high-pressure (7.5KPsi) miniature rotary union; executed multiphysics simulations, CFD analysis and experimental tests to validate seal integrity and minimize power loss by 13%.
- Pioneered trimming of hydraulic nozzle size by 33% while increasing efficiency by 20% by using ANSYS CFD simulation.
- Drove memory management and optimized MATLAB scripts of rotor dynamic system in high performance environment.
- Developed a novel torsional shock absorber for protection against sudden change in loading conditions having efficacy of 80%.

Program Analyst Trainee | Cognizant Technical Solutions, Pune, India

Aug 2021 - Jun 2022

- Engineered Java-based automation frameworks to validate product compliance and accelerating evaluation time by 40%.
- Architected automated quality assurance system with dynamic parameter controls resulting in \$20,000 annual cost reduction.
- Initiated development of comprehensive regression testing suite, achieving 10% reduction in production bugs.

Mechanical Engineer -Intern | Setco Spindles, India

Nov 2020 – Jan 2021

- Conducted a comprehensive 5-point cause analysis (RCA) in small spindle department to identify operational inefficiencies resulting in a 10% improvement in cycle time and reliability of product.
- Collaborated closely with quality control team to refine (GD&T) of new assemblies, to eliminate scrap by 15%.
- Led Sensor fault diagnostics using FMEA; executed replacement, and calibration reducing cycle time by 15%.

PROJECTS

Prototype of Adaptive Headlights for vehicles using computer vision

Sep 2022 - Dec 2022

- Designed adaptive headlights capable of detecting incoming vehicles with an accuracy of 98% and adjust angle of projection of headlight to minimize glare on incoming vehicles with OpenCV with help of 2 teammates.
- Prototyped a model to demonstrate feasibility with raspberry pi and Arduino, achieving 100% objectives.

Kinematic Modelling and Motion Mapping of Robotic Arms in an underwater ROV

Nov 2020 - May 2021

- Piloted a team of 6 students to engineer remotely operated vehicle (ROV) for expansion tasks for critical sub sea level activities.
- Formulated and implemented PID control, motion mapping and sensor integration of 4-DOF and 6-DOF hydraulic robotic arm for an underwater ROV covering 100% objectives.

Electric Two-Wheeler | Team BOLT (Electric SAE student Team)

Sep 2018 - Dec 2020

- Started team BOLT, Spearheaded Braking, CAD department while organizing and streamlining functioning of organization.
- Conceptualized battery pack algorithm with 92% accuracy and worked on development of battery thermal management system.
- Implemented autonomous braking and driving assist using long range proximity sensors in a bike with 97% success.
- Won 2nd prize in SAE electric two-wheeler design competition India amongst 75+ teams.

PATENT

A Retractable Panel Assembly with Auxetic Structure. (Granted)

- Pioneered a compact, retractable solar panel system with auxetic structures, enhancing space efficiency by 40% and maximizing solar energy capture.
- Managed 6-person assembly team; optimized design processes and quality protocols, achieving on-time delivery.